WHAT IS CLAIMED IS:

1. A method of generating a sentence from a semantic representation, the method comprising:

(A) mapping the semantic representation to an unordered set of syntactic nodes;

(B) using grammar rules from a generation grammar and statistical goodness measure values from a corresponding analysis grammar to create a tree structure to order the syntactic nodes; and

(C) generating the sentence from the tree structure.

2. The method of claim 1, wherein step (B) of using grammar rules from the generation grammar further includes using a simplified form of the analysis grammar as the generation grammar.

3. The method of claim 2, wherein the analysis grammar includes lists of conditions for each grammar rule, and wherein using the simplified form of the analysis grammar as the generation grammar further comprises ignoring all conditions from the analysis grammar except those directly related to semantic representation.

4. The method of claim 3, wherein using the simplified form of the analysis grammar as the generation grammar further comprises using a context free form of a context sensitive analysis grammar as the generation grammar.

5. The method of claim 1, wherein step (B) of using grammar rules from the generation grammar and statistical goodness measure values from the corresponding analysis grammar to create a tree structure to order the syntactic nodes further comprises:

(B)(1) selecting a syntactic node to be the root node of a new syntactic tree;

(B)(2) identifying generation grammar rules that apply to each leaf node in the tree, by testing rule conditions on semantically-derived attributes of the nodes;

(B)(3) generating syntactic substructures described by each applicable rule and determining a statistical goodness measure value for each substructure; and

(B)(4) selecting the substructure with the highest statistical goodness measure value to use to expand the tree.

6. The method of claim 5, wherein step (B)(2) of identifying generation grammar rules that apply to each leaf node in the tree, by testing rule conditions on semantically-derived attributes of the nodes further comprises:

(B)(2)(i) identifying generation grammar rules that apply to the non-terminal leaf node at the current phrase level; and

(B)(2)(ii) identifying generation grammar rules that apply to the non-terminal leaf node at

a lower phrase level which express the same semantic attributes as a rule at the current phrase level.

7. The method of claim 5, wherein step (B)(4) of selecting the substructure with the highest statistical goodness measure value to use to expand the tree further comprises:

(B)(4)(i) discarding generated substructures that have lower statistical goodness measure values than substructures generated by alternative equivalent generation grammar rules at other phrase levels;

(B)(4)(ii) adding the remaining substructure at the current phrase level with the highest statistical goodness measure value to the current syntactic tree; and

(B)(4)(iii) if no substructures exist at the current phrase level, step down one phrase level and repeat method steps (B)(4)(i) and (B)(4)(ii).

8. The method of claim 5, and further comprising repeating steps (B)(2), (B)(3) and (B)(4).

9. The method of claim 5, wherein step (B)(2) of identifying generation grammar rules that apply to each leaf node in the tree, by testing rule conditions on semantically-derived attributes of the nodes, further comprises:

(B)(2)(i) identifying generation grammar rules that apply to the non-terminal leaf node at the current phrase level.

10. The method of claim 9, wherein step (B)(4) of selecting the substructure with the highest statistical goodness measure value to use to expand the tree further comprises:

(B)(4)(i) creating a copy of the current tree for each generated substructure at the current phrase level;

(B)(4)(ii) adding each generated substructure to a tree created in (B)(4)(i); and

(B)(4)(iii) combining the statistical goodness measure of each generated substructure with the overall score of the tree to which it is added in (B)(4)(ii).

11. The method of claim 10, and further comprising selecting the highest scoring complete tree for generating the sentence.

12. A computer-readable medium having computer executable instructions for performing the sentence generating steps comprising:

(A) mapping a semantic representation to an unordered set of syntactic nodes;

(B) using grammar rules from a generation grammar and statistical goodness measure values from a corresponding analysis

grammar to create a tree structure to order the syntactic nodes; and

(C) generating the sentence from the tree structure.

13. The computer-readable medium of claim 12, wherein step (B) of using grammar rules from the generation grammar further includes using a simplified form of the analysis grammar as the generation grammar.

14. The computer-readable medium of claim 13, wherein the analysis grammar includes lists of conditions for each grammar rule, and wherein using the simplified form of the analysis grammar as the generation grammar further comprises ignoring all conditions from the analysis grammar except those directly related to semantic representation.

15. The computer readable medium of claim 14, wherein using the simplified form of the analysis grammar as the generation grammar further comprises using a context free form of a context sensitive analysis grammar as the generation grammar.

16. The computer-readable medium of claim 12, wherein step (B) of using grammar rules from the generation grammar and statistical goodness measure values from the corresponding analysis grammar to create a tree structure to order the syntactic nodes further comprises:

(B)(1) selecting a syntactic node to be the root node of a new syntactic tree;

(B)(2) identifying generation grammar rules that apply to each leaf node in the tree, by testing rule conditions on semantically-derived attributes of the nodes;

(B)(3) generating syntactic substructures described by each applicable rule and determining a statistical goodness measure value for each substructure; and

(B)(4) selecting the substructure with the highest statistical goodness measure value to use to expand the tree.

17. The computer-readable medium of claim 16, wherein step (B)(2) of identifying generation grammar rules that apply to each leaf node in the tree, by testing rule conditions on semantically-derived attributes of the nodes further comprises:

(B)(2)(i) identifying generation grammar rules that apply to the non-terminal leaf node at the current phrase level; and

(B)(2)(ii) identifying generation grammar rules that apply to the non-terminal leaf node at a lower phrase level which express the same semantic attributes as a rule at the current phrase level.

18. The computer-readable medium of claim 16, wherein step (B)(4) of selecting the substructure

with the highest statistical goodness measure value to use to expand the tree further comprises:

(B)(4)(i) discarding generated substructures that have lower statistical goodness measure values than substructures generated by alternative equivalent generation grammar rules at other phrase levels;

(B)(4)(ii) adding the remaining substructure at the current phrase level with the highest statistical goodness measure value to the current syntactic tree; and

(B)(4)(iii) if no substructures exist at the current phrase level, step down one phrase level and repeat method steps (B)(4)(i) and (B)(4)(ii).

19. The computer-readable medium of claim 16, and further having computer executable instructions for repeating steps (B)(2), (B)(3) and (B)(4).

20. The computer-readable medium of claim 16, wherein step (B)(2) of identifying generation grammar rules that apply to each leaf node in the tree, by testing rule conditions on semantically-derived attributes of the nodes, further comprises:

(B)(2)(i) identifying generation grammar rules that apply to the non-terminal leaf node at the current phrase level.

21. The computer-readable medium of claim 20, wherein step (B)(4) of selecting the substructure

with the highest statistical goodness measure value to use to expand the tree further comprises:

(B)(4)(i) creating a copy of the current tree for each generated substructure at the current phrase level;

(B)(4)(ii) adding each generated substructure to a tree created in (B)(4)(i); and

(B)(4)(iii) combining the statistical goodness measure of each generated substructure with the overall score of the tree to which it is added in (B)(4)(ii).

22. The computer-readable medium of claim 21, and further having computer executable instructions for performing the step of selecting the highest scoring complete tree for generating the sentence.

23. A sentence generating system for generating a natural language sentence from an input semantic representation, the sentence generating system comprising:

a node mapper which maps the semantic representation to an unordered set of syntactic nodes;

a syntactic node orderer which uses grammar rules from a generation grammar and statistical goodness measure values from a corresponding analysis grammar to create a tree structure to order the syntactic nodes, wherein the generation grammar is a

simplified form of the analysis grammar; and

an inflection generator which produces an inflected form of leaf nodes in the tree structure and generates the sentence from the tree structure with the inflected form of the leaf nodes.

24. The sentence generating system of claim 23, wherein the analysis grammar includes lists of conditions for each grammar rule, and wherein the simplified form of the analysis grammar used by the syntactic node orderer as the generation grammar ignores all conditions from the analysis grammar except those directly related to semantic representation.

25. The sentence generating system of claim 24, wherein the generation grammar is a context free form of a context sensitive analysis grammar.

26. The sentence generating system of claim 24, wherein the syntactic node orderer creates the tree structure to order the syntactic nodes by performing the steps:

(1) selecting a syntactic node to be the root node of a new syntactic tree;

(2) identifying generation grammar rules that apply to each leaf node in the tree, by testing rule conditions on semantically-derived attributes of the nodes;

(3) generating syntactic substructures described by each applicable rule and determining a statistical goodness measure value for each substructure; and

(4) selecting the substructure with the highest statistical goodness measure value to use to expand the tree.

27 The sentence generating system of claim 26, wherein step (2), performed by the syntactic node orderer, of identifying generation grammar rules that apply to each leaf node in the tree, by testing rule conditions on semantically-derived attributes of the nodes further comprises:

(2)(i) identifying generation grammar rules that apply to the non-terminal leaf node at the current phrase level; and

(2)(ii) identifying generation grammar rules that apply to the non-terminal leaf node at a lower phrase level which express the same semantic attributes as a rule at the current phrase level.

28. The sentence generating system of claim 26, wherein step (4), performed by the syntactic node orderer, of selecting the substructure with the highest statistical goodness measure value to use to expand the tree further comprises:

(4)(i) discarding generated substructures that have lower statistical goodness measure values than substructures generated by

alternative equivalent generation grammar rules at other phrase levels;

(4)(ii) adding the remaining substructure at the current phrase level with the highest statistical goodness measure value to the current syntactic tree; and

(4)(iii) if no substructures exist at the current phrase level, step down one phrase level and repeat steps (4)(i) and (4)(ii).

29. The sentence generating system of claim 26, wherein the syntactic node orderer creates the tree structure to order the syntactic nodes by repeating steps (2), (3) and (4).

30. The sentence generating system of claim 26, wherein step (2), performed by the syntactic node orderer, of identifying generation grammar rules that apply to each leaf node in the tree, by testing rule conditions on semantically-derived attributes of the nodes, further comprises:

(2)(i) identifying generation grammar rules that apply to the non-terminal leaf node at the current phrase level.

31. The sentence generating system of claim 30, wherein step (4), performed by the syntactic node orderer, of selecting the substructure with the highest statistical goodness measure value to use to expand the tree further comprises:

(4)(i) creating a copy of the current tree for each generated substructure at the current phrase level;

(4)(ii) adding each generated substructure to a tree created in (4)(i); and

(4)(iii) combining the statistical goodness measure of each generated substructure with the overall score of the tree to which it is added in (4)(ii).

32. The sentence generating system of claim 31, wherein the inflection generator generates the sentence from the tree structure by selecting the highest scoring complete tree.